



WESSEX DOORS

| Generation III Troubleshooting

electric residential garage door operators



**DC800N-III
DC650N-III**



DC550N-III

Technical Data Sheet

20061128



Technical data	KSY1000-868MHZ	KSY700-868MHZ	KSY550-868MHZ	KSO-240V-868W
model name NEW ►	DC800N-III	DC650N-III	DC550N-III	
Maximum push and pull force	1000N	800N	650N	550N
Nominal force		150N		
Drive system	Interchangeable; chain or ultra quiet and maintenance-free toothed cable or belt drive			
Operator programming NEW ►	3 buttons and double digit numerical display on motor head		3 buttons / LED	
Diagnostic display (error message)	Double digit numerical display on motor head		Yes	
Courtesy light	240V-40W (E14) lighting Time adjustable (2 - 240sec.)	240V-40W (E14) lighting. 180 sec.	240V-40W (E14) lighting. 180 sec.	
Automatic safety cut-out	Automatically learned for both open and close direction. Monitored and adjusted each cycle			
Push and pull force limit	Automatic set and adjustable for both open and close direction			
Force 'offset' sensitivity	Automatic set and adjustable for both open and close direction			
Programmable safety reverse NEW ►	Short or full door reverse		Full reverse	
Open and close door position settings	Electronically set and monitored with patented reference switch system. No mechanical excess travel stop required			
"Intermediate" door position NEW ►	Yes	-	-	
Operator Speed	Adjustable (maximum 140mm/sec) for both open and close direction		Both open & close	
Door travel speed	140 mm/sec.	140 mm/sec.	120 mm/sec.	120 mm/sec.
Opening time (door specific) approximately	15 sec.	15 sec.	18 sec.	20 sec.
Soft" start / "Soft" stop	Adjustable ; "Off" / 200mm / 300mm / 400mm			-
Automatic closing	Adjustable (0-255 sec.)	0 or 30 sec.		-
Quick Program automatic closing NEW ►	Preset automatic closing values			-
Photocell	Class 3 self monitoring			
Closing edge safety device NEW ►	Can be connected			-
Programmable Impulse type NEW ►	Yes			-
External warning light	Can be connected via optional in- or external relay			
Additional lighting	Can be connected via optional relay with equal time as courtesy light			-
Door open position signaling NEW ►	Can be connected via optional relay			-
Door closed position signaling NEW ►	Can be connected via optional relay			-
Electronic back drive (burglary) detection	Automatic door closure when a 10mm motor back drive is detected			
Connection possibility for alarm system	Yes			-
Factory reset function	Yes			
Remote control	2 x 868MHz. 4-button mini transmitters with wall holder and visor clip			-
Transmitter coding	Digital multi-bit fail safe system with more than 268 Billion codes.			
Motor	DC self inhibiting worm gear motor with RPM sensor Transformer with thermal overload protection Short-term duty: KB2min. IP20 protection; for dry rooms only			
Mains	230 / 240 V/AC, 50Hz., with CEE phase changer plug	230 / 240 V/AC, 50Hz.		
Stand-by consumption	Approx. 3.9W			
Dimensions (W x H x D)	Operator head KSY: 19.7 x 15 x 37.5 cm. Carton dimensions: 25 x 17 x 50 cm.			

Technical data	KSY1000-868MHZ	DC800N-III	DC650N-III	DC550N-III
Headroom required		30mm (35mm with rail clamp)		
Chain / Toothed Cable / Belt relief		Automatic / adjustable		
Interchangeable boom		1-piece pre-assembled or 2-piece semi assembled. Including rail support props to prevent direct tension onto motor shaft		
Chain drive system		Strong durable steel chain		
Toothed cable system NEW ►		Maintenance free, ultra quiet and patented toothed cable		
Belt drive system		Maintenance free, ultra quiet, steel reinforced toothed belt		
Emergency release mechanism		Yes		
Integrated door security kit NEW ►		Mechanical carriage locking device (per 2008)		
Fitting		Universal fitting for up-and-over and sectional doors		

Boom Type	Rail length	Overall length	Carriage travel
Short boom (308 series) NEW ►	3080 mm.	3353 mm.	2590 mm.
Medium boom (333-series) NEW ►	3330 mm.	3603 mm.	2840 mm.
Long boom (411-series)	4090 mm.	4363 mm.	3600 mm.

Accessories	
Frequency operated	Multibit transmitters - inter-changeable 868 or 433 MHz. Receivers external universal 24VDC or 240VAC (waterproof) receivers plug-in or build in light switches, tubular motor switches wireless bell push - wireless code pad
Impulse	3-function console - bell push button - key switch - transponder
Safety	Beam break - closing edge safety device - signal lights
Installation	Door connector attachments for large, heavy sectional doors Fitments for up-and-over doors and wing doors

Certification	
Norms and standard base	EN12453, EN292-1, EN 50081-1, EN 50082-1, EN 55014, EN 60335-1 EN60335-2-95, EN 12445, EN 61000-3-2, EN 61000-3-2 ETS 300220, ZH494 April 89, VDE 0700-238
EG Declaration of conformity	certificates EN 13241-1 per door brand available upon request EN 13241-1, EN 12453, EN 12445 89/106/EWG, 98/37/EG, 72/23/EWG, 89336/CEE

Copyright.
Subject to alterations in the interests of technical process.

EKING
access control systems

Rail (channel) overview

Chain drive rail

	Type	Article nr.	Available in 2-piece	Total assembled Length	Rail Length	Carriage Travel
Short chain	RCD308-1P	150077302	150077308	3353 mm	3080 mm	2590 mm
Medium chain	RCD333-1P	150077311	150077317	3603 mm	3330 mm	2840 mm
Long chain	RCD411-1P	158011177	150066794	4363 mm	4090 mm	3600 mm



Belt drive rail

	Type	Article nr.	Available in 2-piece	Total assembled Length	Rail Length	Carriage Travel
Short belt	RBD308-1P	150077303	150077309	3353 mm	3080 mm	2590 mm
Medium belt	RBD333-1P	150077312	150077319	3603 mm	3330 mm	2840 mm
Long belt	RBD411-1P	158011182	150066795	4363 mm	4090 mm	3600 mm



Toothed Cable rail

	Type	Article nr.	Available in 2-piece	Total assembled Length	Rail Length	Carriage Travel
Short rail	RTC308-1P	150077304	150077310	3353 mm	3080 mm	2590 mm
Medium rail	RTC333-1P	150077316	150077320	3603 mm	3330 mm	2840 mm



*Subject to change and technical alterations
Based on KSY motor head and maximum measurements*

| Explanation

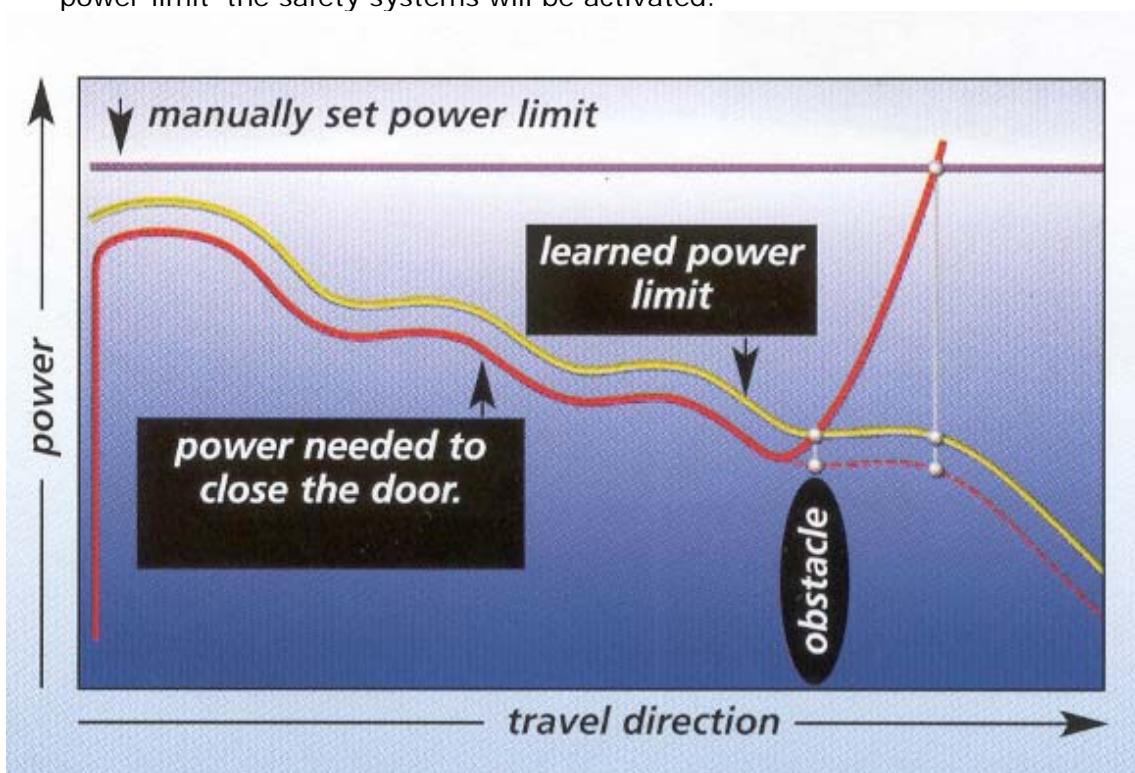
Explanation

AUTOMATIC FORCE CONTROL SYSTEM

Our motor heads have a state-of-the-art Force Control System for optimal safety. It automatically learns and sets up and down force sensitivity settings during initial cycles. The patented power limit is a plus for security.

We have an extremely high level of sensitivity. Electronics monitor the moving door at every point of its travel. Unlike other control systems our operator recognizes at every position of the door, how much force is normally required to move it. If the door meets an obstacle, the operator reacts more quickly than a conventional operator.

- Electronics 'learn' maximal required force at each travel point of door (red line).
- An offset value will be added to set a "learned power limit" (yellow line). This increased value is needed to accommodate changes in i.e weather conditions (storm, cold, etc).
- The manually set power limit (purple line) is an extra operational safety. Once automatic 'learned power limit' exceeds the 'manually set maximum power limit' the safety systems will be activated.



Limit cam on chain or belt

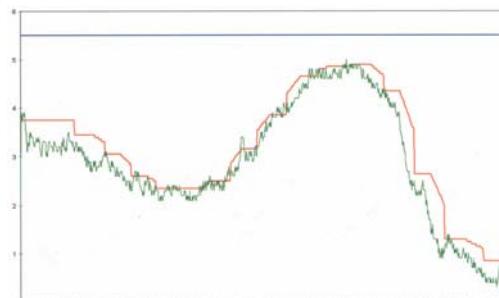
The limit cam on either chain or belt is 'the heart' of the operator. Each cycle the cam passes the limit switch. This is the so-called "time zero" point from which the operator electronics start counting. Meaning Time zero + 3,28 sec. = door open position. It also enables the operator to exactly know where it is (required for self learned force).

Below chart indicates the actual measured force required to open and close a 'regular' residential sectional door. This indicates why variable automatic force setting is required to have an operational safe automatic garage door operator.

- **MEASURED FORCE OF A RESIDENTIAL SECTIONAL GARAGE DOOR:**



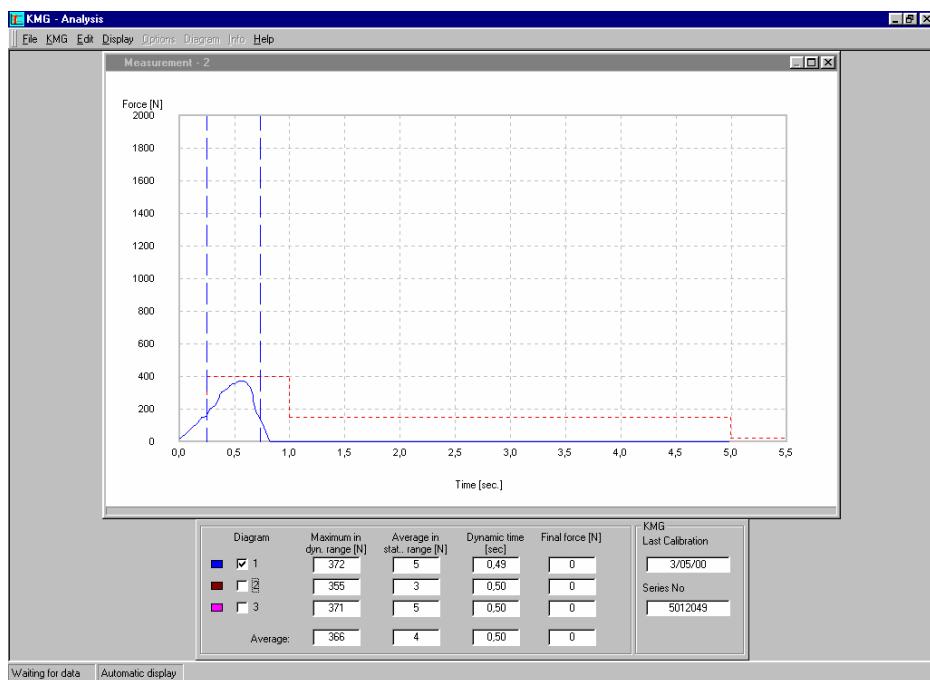
While opening



While closing

Our garage door operators do meet the CE norms. For example, one of the norms requires a garage door to reverse within 1 second with having a static force never exceeding 400N.

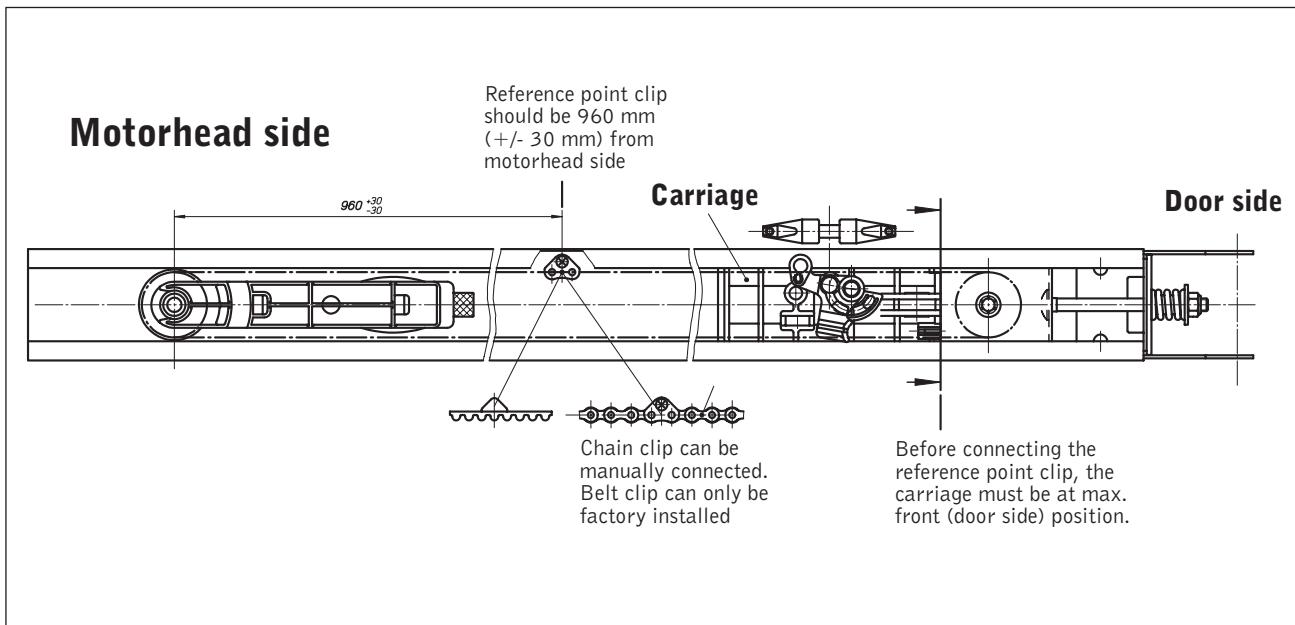
- Measured force at 300mm. from bottom of sectional door.
CE testing according to EN 12445 and EN 12453:



| Troubleshooting

LIMIT CAM POSITION (REFERENCE POINT CLIP)

In case you have to install a new limit cam on to your chain, please follow below instructions. It is only possible to install a clip onto a chain. When you have a belt drive boom, it is not possible to reinstall a limit cam.



Limit clip

Troubleshooting DC550N-III

There are many reasons why a consumer experiences a 'problem' with the door operator.

It is up to logic thinking of customer service representative to pin-point the problem. However, we as manufacturer, have implemented a more than simple diagnostic system in all our garage door operators.

When a consumer calls with a problem the first questions should always be:

- Please press **P** briefly and add the numbers inside LED's.?

Our operators are set up with so-called error numbers. Each LED has an icon and a number in it's display: for example **6A**. The sum of numbers displayed in LED icon indicate error.

A sample questionnaire to diagnose problem over the phone:

1. Does **4Θ** glow?
If not, there is no power!
2. Does **|3Θ|** light up briefly during an opening or closing cycle?
If not, the Limit cam on chain or belt is missing or installed incorrect.
3. Door does not close and reverse? (Safety systems causes door to reverse)
4. Door does not open; it stops? (Safety systems causes door to stop when opening)

Error 5: The automatic set maximum force (power limit or cut-out) is too low

Error 8: Offset learned force is too sensitive (learned power curve or limit)

Advice:

The values for the automatic cut-out (= max. force) and learning power limit (= power curve) can be set manually in the 2nd programming level.

A setting should always be carried out as soon as a less sensitive setting has to be chosen due to door travel properties caused by site conditions, as otherwise the automatic cut-out or power limit would react and cause malfunctions.

In general you have to take care that the allowed operating forces according to EN 12445 and EN 12453 are not exceeded.

14/11/2007 remark

When one is not able to store the door open position (Menu 1 Basic Settings) because Programming automatically quit > (LED 3 flashes indicating an error).

When pressing P button (<1sec.) and when Error message 7 (LED 3 + LED 4) is indicated, it implicates the limit cam did not initiate the limit switch.

Check limit cam on drive system (chain, belt or toothed cable) and check installation.

TROUBLESHOOTING DC550N-III

Fault	Cause	Remedy
Indicator 4 does not glow.	No voltage.	Check mains supply. Check electric socket.
	Thermal protection in mains transformer activated.	Allow mains transformer to cool down.
	Defective control unit.	Cut off mains supply to operator. Remove lamp cover and motor cover. Unscrew control unit, pull slightly forward and withdraw the connecting plug. Remove control unit and have it checked.
Indicator 3 flashes. Error 5 or 8	Automatic cut-out set too sensitively. Door operation too sluggish. Door blocks.	Re-set automatic cut-out to be less sensitive (Level 2 , Menu 2 and 3 page 20). Ensure door moves easily.
Indicator 3 flashes. Error 3 or 7	External photocell defective or interrupted.	Remove obstruction or have photocell checked.
Door open position (Basic settings Menu 1) can not be set and is automatically aborted. Error message 7 is indicated.	Reference point is not initiated during programming cycle.	Check limit cam on drive system. Run door to closed position before setting door open position. Check if reference point is initiated: LED 3 should illuminate for approximately 1 sec. during cycle.
Drive only operates in "OPEN" but not in "CLOSE" direction. Error 7	Photocell programmed, but not connected (Level 2 , Menu 1 page 20).	Reprogramme photocell function or connect photocell.
No response on impulse. Indicator 3 glows.	Connecting terminals for "IMPULSE" button bridged, e.g. due to short-circuit or wrong terminal connection.	Temporarily isolate cabled key switches or interior push buttons from control unit. Remove plug, insert plug and look for cable fault.
No response on impulse. Error 10	Short-circuit label removed, but "STOP" button not connected.	Connect "STOP" button.
Indicator does not flash rapidly on impulse from hand transmitter	Hand transmitter coding is not consistent with receiver coding.	Check coding Menu 3 , page 13.
	Flat battery.	Insert new battery. Flashing LED in transmitter indicates battery condition.
	LED 3 does not light up when pressing transmitter button	Electronic aerial not connected or wrong installation
	Hand transmitter or control unit defective.	Have both components checked.
Insufficient range of remote control (less than 5 m).	Flat battery in hand transmitter.	Insert new 12V A 23 battery. Flashing LED in transmitter indicates battery condition.
Indicator 3 flashes. Error 10	RPM sensor defective.	Have operator checked.
	Door too sluggish.	Check door.
Transmitter command does not respond but wall control does (LED 4 on, LED 3 flashes)	Operator is in electronic 'vacation' lock	De-activate 'vacation' lock on 3-function wall console or by briefly pressing EP button on operator.

ERROR MESSAGES DC550N-III

When LED **|3④|** is flashing the error message can be retrieved by pressing **EP** briefly.

The total sum of numbers in blinking LEDs indicate the so-called error number.

LED flashes erratically

Error number

Fault

 3④ 	3	Photocell actuated
 5① 	1	Programming aborted
 5② 	2	Reference point switch defective
 4④ 	4	Defective RPM sensor Anti-lock system actuaed
 4④ + 5① 	5	Power limit
 4④ + 3④ 	7	Excess travel stop
 4④ + 3④ 	7	Photocell self-monitoring unit not o.k.
 4④ + 3④ 	7	Reference point not initiated during Menu 1 settings
 4④ <-> 3④ 	7	Voltage monitoring is active
 4④ + 3④ + 5① 	8	Power limit self-monitoring unit
 4④ + 3④ + 5① 	8	Learned power limit
 4④ + 3④ + 5① 	8	Response sensitivity of power limit
 4④ + 3④ + 5② + 5① 	10	NC contact (Terminal 7&8) broken

Troubleshooting DC650N/800N-III

There are many reasons why a consumer may experience a 'problem' with the garage door operator.

It is up to logic thinking of customer service representative to pin-point the problem. However, we as manufacturer, have implemented a more than simple diagnostic system in all our garage door operators.

When the garage door operator detects an malfunction the letter **E** will flash indicating an error. By pressing the **(P)** programmation button an error number will be indicated. This error number will indicate particular malfunction.

10. Troubleshooting DC650N-III and DC800N-III

Malfunctions without error message		
Error	Cause	Solution
Nr. 1 of Nr. 18 does not light up.	- no voltage.	- check if mains power supply is available. - check mains socket.
	- thermal overload protection in power transformer activated.	- allow power transformer to cool down.
	- defective control unit.	- check operator.
No reaction on impulse.	- connection terminals for "impulse" button were by-passed, e.g. due to a short-circuit or flat terminals.	- separate possibly connected key switches or interior pushbuttons from the control unit.
No reaction on impulse via hand transmitter.	- modular antenna is not inserted.	- connect antenna with the control unit.
	- hand transmitter coding does not correspond to the receiver coding.	- check coding. - Activate hand transmitter again.
	- hand transmitter battery empty.	- insert new 3V CR 2032 battery.
	- defective hand transmitter, control unit electronics or modular antenna.	- check all 3 components.



10. Troubleshooting DC650N-III and DC800N-III

Malfunctions with error message		
Error	Cause	Solution
	<p>A malfunction has been registered. By quickly pressing the P button, an error number will be displayed. Each number indicates individual type of malfunction.</p>	
	<ul style="list-style-type: none"> - No error messages in memory or factory reset accomplished. 	
	<ul style="list-style-type: none"> - external photocell interrupted or defective. 	<ul style="list-style-type: none"> - remove obstacle or check photocell.
	<ul style="list-style-type: none"> - Photocell is programmed but not connected. 	<ul style="list-style-type: none"> - Deactivate photocell or connect it.
	<ul style="list-style-type: none"> - after 120 seconds without pressing a button, the programming mode terminates automatically. 	
	<ul style="list-style-type: none"> - Reference point not initiated during Menu 1 settings. 	<ul style="list-style-type: none"> - check limit cam on drive system. - Run door to closed position before setting door open position. - Check if reference point is initiated  for approximately 1 sec. during cycle.
	<ul style="list-style-type: none"> - defective reference point switch. 	<ul style="list-style-type: none"> - check operator.
	<ul style="list-style-type: none"> - defective RPM sensor / blocked operator or operator booms. 	<ul style="list-style-type: none"> - check operator and operator booms.
	<ul style="list-style-type: none"> - door movement too stiff. - blocked door. 	<ul style="list-style-type: none"> - make door easily moveable.
	<ul style="list-style-type: none"> - Maximum force is active (linear line). 	<ul style="list-style-type: none"> - Have maximum force checked by specialist dealer.
	<ul style="list-style-type: none"> - excess travel stop. 	<ul style="list-style-type: none"> - check operator and operator booms.
	<ul style="list-style-type: none"> - Anti-motor back drive detected when Motor was in operational mode. 	<ul style="list-style-type: none"> - check external (burglary) damages to door.
	<ul style="list-style-type: none"> - Vacation lock activated. 	<ul style="list-style-type: none"> - de-activate vacation lock on 3-function wall console or by briefly pressing P button.
	<ul style="list-style-type: none"> - undervoltage (Current lower than 150VAC). 	<ul style="list-style-type: none"> - check building power supply.

10. Troubleshooting

Error	Cause	Solution
	- Self test external photocell not okay.	- Have photocell checked.
	- defective power sensor for the automatic cut-out.	- check operator and operator booms.
	- door movement too stiff or irregular. - blocked door.	- check door movement and make door easily moveable.
	- Sensitivity (learned power curve) is active. Reduce sensitivity by increasing offset value.	- Have sensitivity (learned power curve) checked by specialist dealer.
	- defective electronics.	- check operator.
	- short-circuit cable between Terminal 7&8 is removed or stop-button is not connected - closed circuit interrupted.	- Connect stop button or insert short-circuit cable.